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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/511,546

10/18/2004

Hiroshige Deguchi

52363-023

6507

20277 7590 04/27/2009  
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EXAMINER

TURNER, KATHERINE ANN

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

04/27/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/511,546 | <b>Applicant(s)</b><br>DEGUCHI ET AL. |  |
|                              | <b>Examiner</b><br>Katherine Turner  | <b>Art Unit</b><br>1795               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 16, 2009 has been entered. Claims 3-5 are pending. Claim 3 is amended. Claims 1-2 are cancelled.

2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on March 28, 2008.

### ***Specification***

3. The objection to the specification is withdrawn, because the Applicant's arguments are persuasive.

### ***Claim Rejections - 35 USC § 112***

4. The claim rejection under 35 U.S.C. 112, second paragraph, on claim 3 is withdrawn, because the claim has been amended and Applicant's arguments are persuasive.

***Claim Rejections - 35 USC § 103***

5. The claim rejections under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al. (US 2001/0012211), in view of Oga et al. (JP 2000-073932) and Clarke et al. (WO 03/017407) on claims 3-5 are withdrawn, because independent claim 3 has been amended.

6. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erdman (US 5,225,712) in view of Clarke et al. (WO 03/017407) and Oga et al. (JP 2000-073932; please see JPO IPDL machine translation for citation).

Erdman discloses a method of designing a battery system comprising the steps of: determining a difference between an output of power generation of wind turbine that varies irregularly in output of power generation, and a desired constant average output power for delivery to the power grid (Applicant's target output) obtained by smoothing the output of the wind turbine, determining the output power to the power grid from the energy storage device, which is power outputted from the inverters (Applicant's DC/AC converter), and the area between the lines extending along the constant average output power for delivery being the amount of energy storage into or withdrawal from the energy storage device, and determining the amount of capacity (Applicant's specified output) for the energy storage device from the amount of excess generated power or less power generated (Applicant's output difference) (figures 1-3, 17-18 and 21; column 2, lines 1-5; column 3, lines 14-24; column 4, lines 53-56; column 10, lines 52-68; column 11, lines 1-68), also the amount of capacity of the energy storage device can be

Art Unit: 1795

increased by increasing number of batteries (figure 16; column 10, lines 6-40), and that the energy storage device can be by a type of battery (column 10, lines 32-40), but is silent as to the energy storage device being a redox flow battery, or the use of a standard deviation to determine the capacity of the battery (Applicant's specified output), the number of batteries, or output power to the power grid from the energy storage device, which is power outputted from the inverters (Applicant's DC/AC converter).

Clarke et al. teaches a rechargeable cerium zinc redox flow battery to force electrolytic solution to be fed to and discharged from its cells, which is a load leveling battery (figure 1; abstract; page 8, lines 12-22; page 9, lines 1-7). Clarke et al. teaches that this battery's capacity is particularly useful as a load leveling battery since its capacity is only limited by the supply of electrolyte (page 7, lines 3-6), and that it is significantly less problematic with regard to the environment and health of operators/manufacturers than numerous alternative known load leveling batteries (page 7, lines 12-14). It would have been obvious for one of ordinary skill in the art the time the invention was made to utilize Clarke et al.'s rechargeable redox flow battery as Hasegawa et al.'s rechargeable battery, because it is particularly useful as a load leveling battery since its capacity is only limited by the supply of electrolyte, and because of the low levels of problems with regard to the environment and health of operators/manufacturers as taught by Clarke et al. (page 7, lines 3-6 and lines 12-14).

Oga et al. teaches using a battery with power capacity of 1-2 times the standard deviation value of averages determined for power outputs in a wind power generator and battery system, because it provides the ability to not be concerned with change of a

Art Unit: 1795

wind speed (drawings 2-3; abstract; paragraph 14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the averages of the excess generated power or less power generated (Applicant's output difference), which are used to determine the capacity of the energy storage device, and utilize the battery power capacity of 1-2 times the standard deviation value of the averages, because Oga et al. teaches the use of a battery power capacity of 1-2 times the standard deviation value of averages determined for power outputs in wind power generator and battery systems provide the ability to not be concerned with change of wind speed (drawings 2-3; abstract; paragraph 14).

Erdman discloses the battery power capacity being determined is: the amount of capacity (Applicant's specified output) for the energy storage device (column 11, lines 44-68), the number of energy storage devices (column 10, lines 6-31), and the output power to the power grid from the energy storage device, which is power outputted (Applicant's specified output of the DC/AC converter) from the inverters (Applicant's DC/AC converter) (figures 1-3, 17-18, and 21; column 8, lines 47-63; column 10, lines 52-68; column 11, lines 1-68).

Regarding claim 4, Erdman modified by Oga et al. teaches the power outputted (Applicant's specified output of the DC/AC converter) from the inverters (Applicant's DC/AC converter) (Erdman figures 1-3, 17-18, and 21; column 8, lines 47-63; column 10, lines 52-68; column 11, lines 1-68), which is a battery power capacity, being set to be in the range of 1-2 times the standard deviation value (drawings 2-3; abstract; paragraph 14).

Art Unit: 1795

Regarding claim 5, Erdman modified by Oga et al. teaches the amount of capacity (Applicant's specified output) for the energy storage device (column 11, lines 44-68), which is a battery power capacity, being set to be in the range of 1-2 times the standard deviation value (drawings 2-3; abstract; paragraph 14).

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 3-5 have been considered but are moot in view of the new ground(s) of rejection.

### ***Correspondence/Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine Turner whose telephone number is (571)270-5314. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571)272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. T./

Examiner, Art Unit 1795

/Dah-Wei D. Yuan/

Supervisory Patent Examiner, Art Unit 1795